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ABSTRACT

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Sustaining A Virtual Support Organization
The Learning Technologies Partnership
A Model for the New Millennium

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Abstract

To meet the ever growing demand to integrate information technology into all aspects of university life, the University of Arizona has been exploring new support models. One of the most successful strategies for improving the instructional environment is found in the Learning Technologies Partnership. Created in 1995 to improve support and expand development opportunities for teaching faculty, the functional links between diverse service units--computer center, library, teaching center, video services, a new media research center, and the extended university--now support a "virtual organization". The impact of this virtual organization is felt across the curriculum. In its fifth year, the Partnership is preparing to step beyond "doing" to help lead the UA into the next millennium.

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Historical Context--Paving the Way

Developing a technology enriched, pedagogically appropriate instructional environment at the University of Arizona has involved a variety of partnership efforts since the late 1980's. A broad collaboration of visionary faculty supported by a few key administrators and many creative, diligent support staff have made enormous progress possible. All aspects of the University have become involved in one way or another.

One of the earliest partnership efforts was spawned from the 1988 Academic Computing Advisory Committee (ACAC). The ACAC was a long-standing faculty committee convened to advise the Provost

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on needs related to research computing. In those days, undergraduate computing needs were little considered and primarily met with "left over CPU cycles" on research mainframes and meager lab resources. That began to change when a mathematics professor insisted that a survey of departmental instructional needs must happen. Hence, the ACAC Subcommittee on Instruction was convened and a new alliance created between committee faculty and central computing staff. This ad hoc coalition worked together gathering campuswide data and compiling a status report complete with recommendations for moving the UA toward the next millennium.

That first report put a spotlight on instructional computing as a distinct, mission critical arena and established a foundation upon which to refine a campus vision and build an instructional support infrastructure. Between 1988 and 1993 a ground swell of activities increased the pressure on UA administration to improve the funding for instructional technology and bring it closer to parity with research and administrative expenditures. Central unit projects began to address the campuswide context. With "one-time" funding, The Center for Computing and Information Technology (CCIT) installed five new open access labs that housed two hundred PC and Macintosh computers in various classroom buildings and residence halls. New FTE were hired to staff these labs. CCIT also brought online an instructional conferencing system and started a small faculty support center. The UA Library launched its electronic library system, SABIO. In colleges, several innovative faculty projects gained local and national prominence. In 1990 the first faculty-staff instructional computing advisory committee (ICAC) was appointed, and its 1991 Report to the Provost clearly articulated a futuristic campus environment and a framework of strategies to make it happen.

Relentless ICAC lobbying paid off in 1993 when the President and Provost used a portion of new tuition dollars to establish a separate instructional computing (IC) budget. The ICAC was asked to prepare recommendations on how a 700K budget should be allocated. After conducting a needs assessment it devised a strategy that refreshed the needful CCIT labs, provided seed money to establish a multimedia learning lab, and created a grants program to support faculty and department projects. (In subsequent years direct funding for central resources lessened dramatically and the IC Grants program expanded to create more opportunities for competitive campuswide development.)

UA administrators soon faced the fact that meeting rapidly escalating technology demands would not be possible through reallocation of available funds. Efforts were made to institute a technology fee, but it fast became clear that such a fee was not acceptable to either the students or the Board of Regents. So, the Provost and the Vice-Provost for Academic Affairs decided to launch a technology-focused campaign aimed primarily at the State Legislature. The intention of this crusade was two-fold: to raise consciousness of the importance of information technology in higher education and ultimately to increase state funding for "new learning technologies". Again, a partnership of faculty, administrators, and staff came together to articulate an updated vision that in turn became a "road show" complete with interactive multimedia and an enthusiastic, articulate Vice Provost presenter. And it worked…at least in part. A 4.5 million-dollar New Learning Technology Budget was submitted--940K was permanently funded.

This was an exciting victory, but it presented a dilemma as well. The original budget called for a wide spread disbursement of the new moneys to support centralized and decentralized personnel and operational needs. With only 20% funding a new strategy was required.

The choice to associate the New Learning Technology Budget with *faculty development* came about because our Vice Provost for Academic Affairs was actively engaged with the faculty seeking ways to improve the teaching process. During the prior year, through an open call for participation, she had organized a Faculty Development *Team*, which met regularly to discuss a wide range of issues. Several members of this group were very vocal about needs associated with instructional technology and excited

about the possibilities a new budget presented. Thus was born the Faculty Development Partnership, a "virtual organization".

Creating and Sustaining the Virtual Organization

The Faculty Development Partnership was established in June of 1995 as an operational alliance of five service units. The Center for Computing and Information Technology (CCIT), the UA Library, the University Teaching Center (UTC), UAVideoServices, and the Peter Treistman Fine Arts Center for New Media joined together in order "to provide expert technical support; mentoring and collaborative opportunities; technology for courseware creation, teaching and learning; and approaches for measuring learning outcomes." Each member unit appointed a Partnership representative who had an extensive background "in the trenches". Each representative could participate in meetings and other activities from a position of responsibility and authority over unit technology resources and personnel. In it's first iteration, the Partnership group was made up of one faculty member acting as Director of the Treistman Center, one Librarian team leader, the Director of VideoServices, an instructional specialist from the University Teaching Center(UTC), and the staff Manager of CCIT Instructional Support. In addition to the five unit representatives, the Provost Office appointed a Faculty Associate for Faculty Development. Each member of this original core group was a passionate advocate of learning technologies and all shared a vision for collaboratively moving the UA forward.

At its inception each Partnership unit had a distinct history of providing support for teaching faculty and students.

- CCIT was the central technology department responsible for providing broad services that touch all members of the University. In 1995, the primary Partnership affiliation was through CCIT Instructional Support, a unit responsible for maintaining computer labs, shared-host applications such as computer conferencing and instructional web servers, and for assisting faculty in the use of central computing resources. CCIT Instructional Support also was home to the Multimedia and Visualization Lab (MVL) and a small faculty support facility--the Faculty Resources for Instruction (FRI).
- The UA Library was expanding SABIO as an electronic gateway to its growing collection of electronic journals and network information resources. The Library was also planning for the addition of a computing commons and expanding its mission to include information technology literacy training.
- The UTC was assisting UA instructors seeking to improve their teaching and take advantage of new pedagogical understandings. The UTC was also responsible for technologies in campus classrooms and was launching an initiative to renovate and modernize university classrooms. Demand for access to instructional technologies to support development and deployment of new materials was rapidly increasing.
- UA VideoServices was the instructional support arm of the KUAT Public Broadcasting organization and a charter member of the National Technological University (NTU). Responsible for cable and satellite delivery of instructional materials, VideoServices was seeking to increase its presence in mainstream faculty support endeavors.
- The Peter Treistman Fine Arts Center for New Media, was a newly established research center within the Fine Arts College, devoted to exploring the use of multimedia in Fine Arts scholarship and teaching.

The Faculty Associate was a technologically astute and highly committed individual. In this role, she complemented the capabilities of the unit representatives and provided the Partnership with a critical link to the faculty at large and the avenue of communication needed between the Partnership and UA Administration. Our intention was to share in the planning and execution of strategic activities.

maximized available resources and minimizing duplication of efforts. The collection of characteristics and capabilities brought together in the Partnership inspired our belief that the new virtual whole would be far greater then the sum of its parts.

The Provost's office empowered this group to define the 940K budget priorities for our first year of operation, FY 95-96. During that time Partnership representatives met often, at least once per week as a group, and even more often in working teams of 2 or more. Unit representatives were busy gaining knowledge about each while building a distributed coalition of expert staff that incorporated existing personnel with several new positions added in CCIT, UTC, the Library and the Treistman Center. Established technology settings--CCIT labs, the UTC classroom, and the FRI--were improved and the Library opened a prototype information commons. At the same time, IC grant opportunities increased with the addition of a second competitive program designed to foster innovation with seed funding for individual pilot projects. In addition, our Faculty Associate championed awareness by pushing faculty and administrators into focused retreats, sponsoring campus open house events, and motivating her peers to develop broad-based collaborative team projects. Several of these projects continue today, most notably the UA Southwest Project.

In year two, the Partnership was again allowed a large measure of budgetary control. That year our efforts turned toward developing industry partnerships and to creating a large-scale faculty support center. We nearly succeeded in the first endeavor coming very close to establishing an alliance with the then new Lucent Technologies. While no partnership was ultimately created, the experience provided an invaluable education in corporate / university politics. After the fact we realized that no single shared vision had ever been affirmed. Rather, two camps had developed with some stakeholders on both sides operating under diverging assumptions. While academics worked with research and development folks excitedly mapping out product development strategies, the marketing and sales agents were doggedly insisting on hard-dollar financial commitment and long-term "sweetheart deals." Despite our best efforts to inspire faith-in-the-future, ultimately the key decision-makers could not come not come to terms.

On the other hand, our plans to develop a faculty center were wildly successful. With encouragement and financial support from the Provost, renovation of empty space in the Computer Center was completed. A generous contribution from UA Foundation resulted in enough money to equip much of the Center. Resources previously housed in CCIT Faculty Resources for Instruction and the UTC Faculty Classroom were relocated so that when all was said and done, only a small portion of the New Learning Technologies budget was needed to establish a fully operational Faculty Center for Instructional Innovation (FCII). The doors officially opened on April 1, 1997--the same day our Arizona Wildcats came home to celebrate their NCAA basketball championship, a coincidence we accepted as a very good omen.

The FCII is a 7,500 square foot, multi-purpose environment serving teaching faculty, graduate assistant teachers, and instructional support staff. Its purpose is to provide a dynamic interdisciplinary environment that supports exploration and development of new pedagogy, instructional technology, sustained collaborative experiences and distributed educational opportunities. Basic to advanced user services are provided on a walk-in basis and by appointment. FCII equipment includes computers suited for everything from web browsing and word processing to image scanning and multimedia content development. Consulting and training expertise derives from a wide range of skills and talents including graphic arts, web design, analog and digital video production, multimedia authoring, and much more. FCII offers many resources for loan: laptop computers, digital cameras, evaluation software (800 packages), training aids, and ergonomic devices. The FCII was constructed to be flexible. Moveable partitions have been arranged and rearranged to accommodate changing work groups. The current Faculty Associate keeps an office there along with a growing number of staff devoted to the UA's Distributed Learning Initiative. Soon, the team workroom will house several programmers hired to work

on a FIPSE grant project. The Center supports four meeting spaces, which can be reserved to accommodate small to large get-togethers. The presentation area can be setup with a large conference table room or configured as a demonstration site for an audience of up to 50. Open meeting areas (one is a small couch lounge) assist spontaneous collaborations as well as formal group gatherings. These spaces are in high demand and when two or more meetings happen simultaneously the Center becomes a *very* lively place.

The year following implementation of the FCII, 1997 – 98, was a time in which administrative and faculty leadership changed dramatically. The Partnership lost both its Faculty Associate and the Vice-Provost who was our principal administrative champion. Both were "lured away" to positions at other universities. These losses resulted in a serious blow to our ability to behave as an autonomous virtual unit. Decisions regarding Partnership direction and budgets were now made by the Office of Undergraduate Education and an administration that could not appreciate the loose structure, less traditional budget planning and reporting relationships that sustained our virtual organization.

In year three the Partnership endured and advanced through the community of unit representatives and the coalition of expert staff. Several unit heads, particularly the Library Dean and the Director of UTC, encouraged us to maintain our commitment to the Partnership ideal and were instrumental in protecting the funding allocations for existing staff and FCII operations. In spite of difficult changes, loss of budgetary control, and uncertain leadership, there were many successes to report that year. Expanded use of labs as electronic classrooms; new partnerships with academic departments; 24-hour access to the Library Information Commons; addition of a Copyright Librarian; implementation of a classroom network that provided teachers with efficient access to the Internet; new training opportunities for faculty; another successful grants program; integration of new technologies and additional unit staff into the FCII, were some of the achievements. In year three, CCIT increased its commitment to the Partnership by adding the Network Operations Group as a sixth core unit. The group manager assigned became a second CCIT representative.

By July 1998, the beginning of year four, a new Faculty Associate had been appointed to serve the Vice President for Undergraduate Education and assigned to the Partnership. This Faculty Associate was charged to oversee faculty development, but also to guide the development of a distributed learning architecture. The administrative mandate related to distributed learning strongly emphasized a particular bias: to solve problems affecting UA's residential students as opposed to creating programs that would attract new students seeking distance education. At first the constraints of this approach seemed arbitrary and confusing. The impact on the Partnership was a struggle that forced each unit representative to examine the Partnership in light of changing times. Throughout several months weighed down by internal assessment, the operational alliance continued to produce exciting results. Particularly successful projects included the Faculty Laptop Training program, implementation of a pilot instructional MOO, acquisition of a site license for CBT Systems products and initiation of the UA on-line training program. By year's end, two strategic modifications had been achieved as well. The core membership was again expanded to include the UA Extended University, and a new name--The Learning Technologies Partnership--was adopted to reflect our changing nature.

Year five is now underway. The structure of the Partnership has changed, as has the make up of the representatives group. Now, in addition to a Faculty Associate, a librarian, two managers, and two "directors" we also include two associate deans within our ranks. Three of us have key players from the start and might be considered the "hard core" element of the Partnership; but no matter the length of association, all members of this group have grown through their involvement. The Partnership is realigning. A new vision and mission statement are being formulated in line with a new strategic goal to advance beyond the "doing" level, to become a policy-making and advisory body. Budgetary control is returning to the Partnership, and strategies are developing in our current deliberations that will

determine how we continue to expand our role at the University of Arizona and beyond.

Accomplishments

Each Partnership unit can rightly claim to have advanced faculty and student well-being through new resources and services offered by the unit. For example:

- Librarians regularly collaborate with faculty as co-developers of course web sites and in the classroom teaching information and internet literacy;
- CCIT has expanded the availability and improved the quality of lab resources and begun to transition some open access labs to serve as dedicated electronic classrooms;
- UTC has designed robust training opportunities and governed a campus renovation project resulting in over 100 modern teaching environments;
- VideoServices has acquired the technology needed to enter the high definition TV era;
- The Treistman Center has expanded digital media lab capabilities and established a digital arts degree program;
- Extended University has developed a comprehensive IT training and development curriculum; and
- The Faculty Associate for Distributed Learning is implementing an approach to distance learning that utilizes broad faculty involvement and capitalizes on the concept of shareable learning objects.

Individual unit achievement has been notable, but it is because the Learning Technologies Partnership fostered collaborative relationships and common goals among the units that results like the following have been achieved.

- Approximately 100 faculty have completed intensive training in the use of laptop computers, application software and university facilities preparing them to develop new course materials and innovative classroom presentations.
- These faculty and hundreds of others have found support for innovative redesign of their course content and delivery methods;
- Online instructional support tools, e.g., POLIS, RIO and WILBUR, have been developed to meet UA specific instructional and instructional assessment needs;
- Oversight of an annual grants program insures ongoing commitment to individual and collaborative faculty development;
- Inter-unit planning for hardware and software acquisitions insures interoperability from production centers, to labs, to Library Info Commons;
- Investments are optimized through shared use of costly equipment;
- Expert staff in all units know each other well and can more efficiently recommend appropriate support for new development efforts;
- New tools have been acquired for campus wide use (e.g., CBT training);
- New learning environments, as exemplified by the UA MOO, are adding new dimensions to old curriculum.
- Partnership representatives are broadly knowledgeable about the UA environment and are easily able to assemble project teams that support faculty innovations and promote enterprise-wide advancement; and
- A "systems" mentality has taken hold so that no one unit completely "owns" the process or the outcome of an undertaking.

Institutional progress can only be measured by assessing change over several years. Using 1995 as a base year, significant advances can be seen. The infrastructure that supports teaching and learning has grown extensively. All campus buildings are connected to the network. Residence halls provide network

access on a port-per-pillow basis. Dozens more classrooms and labs are equipped to facilitate dynamic teaching and learning. The UAInfo and SABIO web sites provide extensive and organized access to vast information repositories. Central and departmental instructional technology resources have become more and more integrated. Learning technologies are expected to be readily available by a majority of instructors and dismissed as unnecessary by very few. The campus conversation about instructional innovation has moved beyond debating the usefulness of technology, and instead centers on developing strategies for managing and sharing academic data and ways to assess the impact of different instructional methodologies.

Opportunities

As the 21st century beckons, the growing number of alternatives to traditional ways challenges all levels of education. The University of Arizona is preparing to meet the anticipated challenges. Several new initiatives and major projects are defining the University's approach and the Learning Technologies Partnership brings a unique brand of involvement to each. Some of these high profile ventures include:

- The digital library initiative that will increase the availability and interoperability of all kinds of discipline specific materials (text, graphics, multimedia) through a common portal.
- A pilot project investigating how to deliver digital video services in all possible formats, from real-time multicast and streaming video on demand, to digital video editing at the students' desktops.
- The Virtual Adaptive Learning Architecture (VALA) development project--a collaboration with Oracle Corporation, Sun Microsystems, and the FIPSE Learning Anytime Anywhere initiative.
- Investments in site license software, most notably Oracle products, provide common software tools and storage systems to build a broad based and highly integrated information environment.
- New alliances with local community colleges to create new curricula and programs that meet real world needs of the "new traditional student".
- The Integrated Learning Center, UA's state of the art classroom building, set to open in Fall 2001 and designed to support technology facilitated learning and the freshman experience.

Our most challenging and potentially most rewarding opportunity lies in becoming a recognized *partnership of leaders* that can influence and nurture the development of other virtual organizations, thereby creating a more flexible university system that in turn better prepares the UA to meet the unexpected challenges that lie ahead.

Lessons Learned

The Learning Technologies Partnership has successfully demonstrated the value of active sustained collaboration: having created through its work a virtual organization that positively impacts all parts of the university. Our success was founded on several key ingredients. First, visionary leadership: at the onset our Vice Provost and our faculty champion both understood the fundamental need to accept and apply technology in teaching and learning and both believed in the potential of a new and different kind of university structure. Second, open minded, credible, key collaborators: in our case unit managers and team leaders who are able to direct university resources to solve problems. Third, willing staff who are eager to work with and support peer colleagues from "unrelated" units. Fourth, a shared budget that enables interdepartmental decision-making and shared outcomes.

Success would not be sustainable, however, without other ingredients that are more nebulous in nature. Patience is one of the most important core values of our virtual organization. The ability to exercise patient understanding of the university bureaucracy helps us maintain firm commitment to new "ways of

being". Championship is another key to ongoing success. The risk of losing everything during high-level leadership transitions is significant without at least one vocal administrative champion. Communication revolving around open-minded idea sharing is the real key to progress and innovation. Community spirit provides the means to address all problems. Behaving as responsible community members allows individuals to challenge and to nurture each other. Finally we must acknowledge a "secret" ingredient--Passion. It is true passionate commitment that has infused our virtual organization with real strength to stay true to the shared vision and, despite change and uncertainty, to have fun through it all.

Conclusion--Why do it?

Creating a virtual organization such as the one achieved through the University of Arizona's Learning Technologies Partnership can have many benefits. Cost effective use of resources, better service to "customers", greater awareness of the environment, and more efficient decision-making are some obvious benefits. Our experience suggests another, more compelling reason as well. Through our virtual organization we have created a real mechanism and a rational means to bring separated resources (personnel, technologies, knowledge) together so that new, more creative and dynamic results can be achieved on a continuing and more self-sustaining basis.